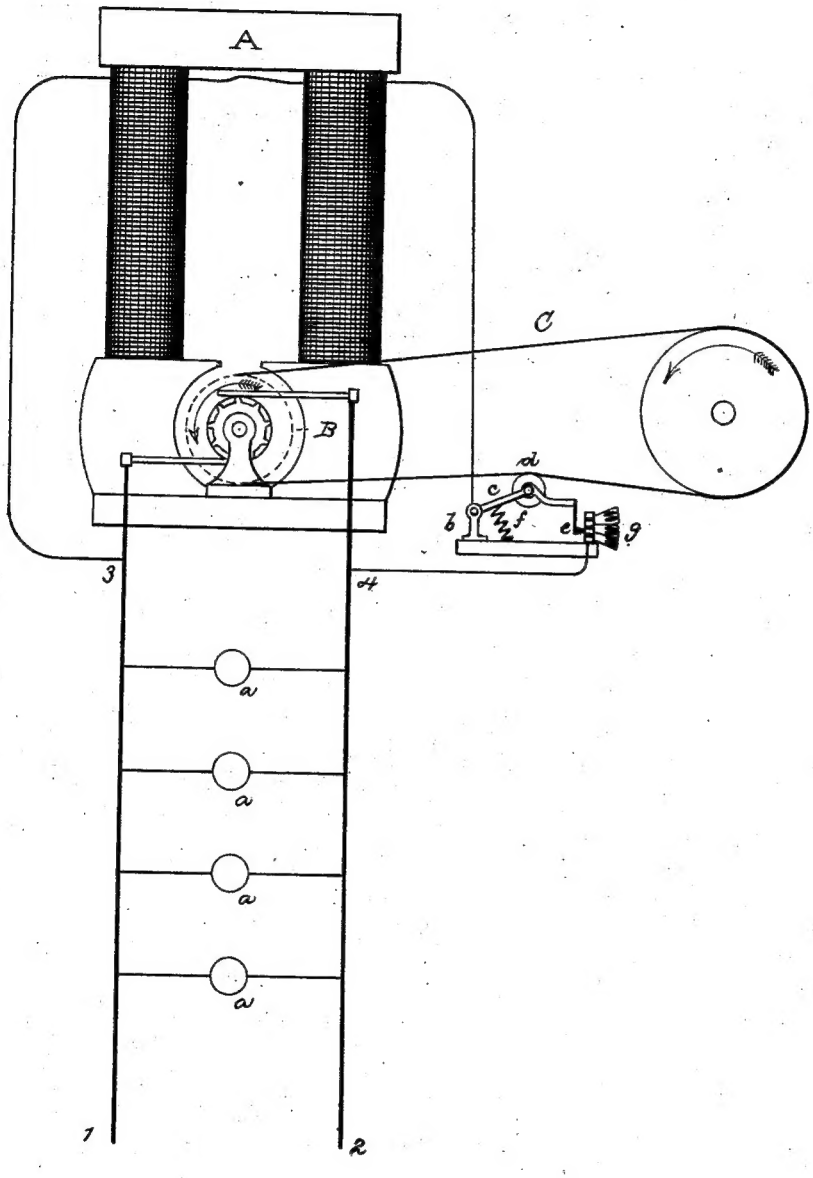
(No Model.)

T. A. EDISON.

REGULATOR FOR DYNAMO ELECTRIC MACHINES.

No. 281,350. Patented July 17, 1883.



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UNITED STATES PATENT OFFICE.

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REGULATOR FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 281,350, dated July 17, 1883.

Application filed November 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Regulators for Dynamo-Electric Machines, (Case No. 519,) of which the following is a specification.

The object of my invention is to produce simple and efficient means for automatically varying the current generated by a dynamo or magneto electric machine supplying translating devices arranged in multiple arc, according to variations in the number of such translating devices in circuit from the machine.

Heretofore various electrical devices have been employed whose variations of energy, occasioned by changes in the current flowing, due to variations in the number of translating devices, have caused the adjustment of resistances for regulating the generation of current. By my present invention I do away with such electrical apparatus, said invention consisting in causing the variations in the number of translating devices to set in operation mechanical means whose operation causes the proper regulation. Preferably such mechanical means operate to vary the resistance in the field-circuit of the machine.

My invention may be accomplished as follows: The armature is revolved by a belt from suitable motive power. Upon the tight or driving side of the belt bears a wheel or roller carried by an arm and pressed closely against the belt by a powerful spring. One end of this arm makes contact with the contact-points of an adjustable resistance in the field-circuit of the machine, the arm being also included in such field-circuit, which is preferably a multiple-arc circuit from the main conductors, though it may be a shunt from one of said main conductors, or a circuit supplied with current from an external source. As the number of translating devices in circuit, and consequently the load driven by the belt, increases, the driving side of the belt tightens, and, pressing on the wheel, compresses the spring and moves the arm, so as to throw resistance out of the field; and a decrease in the number of translating devices allows the belt to slacken, when the spring presses the arm in the opposite direction from before, so as to place resistance in the field, the generation of current being thus regulated according to the requirements of the system.

My invention is illustrated in the accompanying drawing, which is a partly diagrammatic view of a dynamo-electric machine, with the accompanying circuits and regulating apparatus.

A is the field-magnet, and B the armature, revolved by belt C, as indicated by the arrows. From the commutator-brushes of the machine extend main conductors 1 2 in multiple-arc circuits, from which are placed lamps, motors, or other translating devices, *a a*.

To any suitable support, *b*, is pivoted an arm, *c*, carrying a wheel, *d*, and a contact-point, *e*. A heavy spring, *f*, tends to press the wheel *d* closely against the belt C. The point *e* is arranged to make contact with the contacts of an adjustable resistance, *g*, placed in the multiple-arc circuit 3 4, which includes the field-magnet coils of the machine. As above explained, the tightening of the belt C, caused by an increase in the number of translating devices in circuit, presses down the arm *c* and cuts out a part of the resistance *g* from the field-circuit, while on a decrease in the number of lamps or motors the spring *f* presses the arm up and increases the resistance in the field.

What I claim is—

1. The combination, with a dynamo or magneto electric machine and translating devices arranged in multiple arc, of mechanical means operated directly by variations in the load or pull upon the armature for regulating the generation of current by the machine, substantially as set forth.

2. The combination, with a dynamo or magneto electric machine, an adjustable resistance in the field-circuit thereof, and translating devices arranged in multiple arc, of mechanical means operated directly by variations in the load or pull upon the armature for varying said adjustable resistance, substantially as set forth.

3. The combination, with a dynamo or mag-

neto electric machine, the motor actuating the same, and the belt connecting said machine and said motor, of means actuated by variations in the tightness of such belt for regulating the generation of current by said machine, substantially as set forth.

4. The combination, with the belt connecting the generator with the motor which actuates it, of the arm carrying a wheel bearing on said belt, the spring holding said wheel against said belt, the contact-point carried by said arm, and the adjustable resistance in the field-circuit of the generator, substantially as set forth.

This specification signed and witnessed this 13th day of November, 1882.

THOS. A. EDISON.

Witnesses:

H. W. SEELY,

EDWARD H. PYATT.